# Appendix B Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 0:53 and 0:56 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

FIGURE B-1

METEOROLOGICAL SITES WITHIN IMPERIAL, SAN DIEGO, RIVERSIDE, AND YUMA COUNTIES

| Comparison | County |

Fig B-1: Depicts the meteorological and air quality monitoring stations referenced in

this document. Base map from Google Earth

## IMPERIAL COUNTY SITES FIGURES B-2 THROUGH B-11

FIGURE B-2
IMPERIAL COUNTY AIRPORT (KIPL) JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

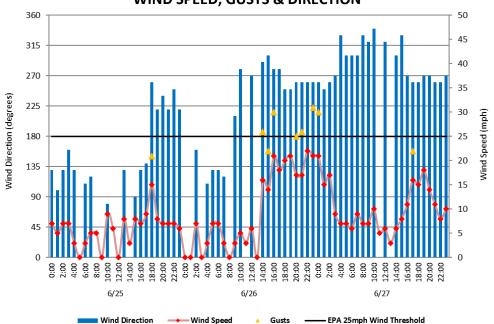
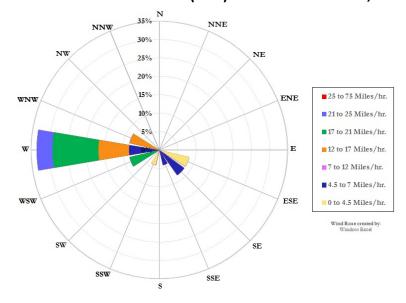


FIGURE B-3
IMPERIAL COUNTY AIRPORT (KIPL) WIND ROSE JUNE 26, 2014



Figs B-2 & B-3: Imperial Airport (KIPL) meteorological data indicates an increase in wind speed accompanied by gusts over 30 mph staring the afternoon on June 26, 2014 Wind data from the NCEI's QCLCD system

FIGURE B-4
EL CENTRO NAF (KNJK) JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

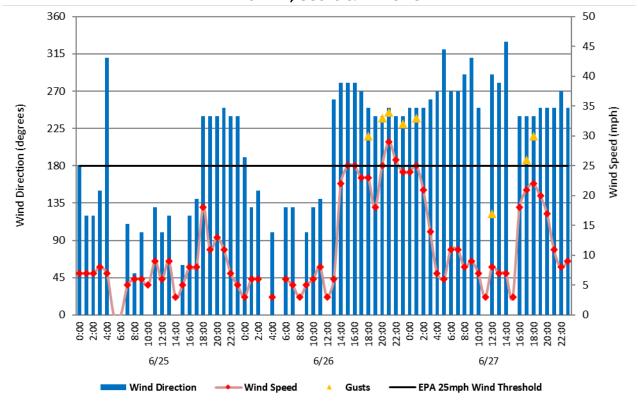
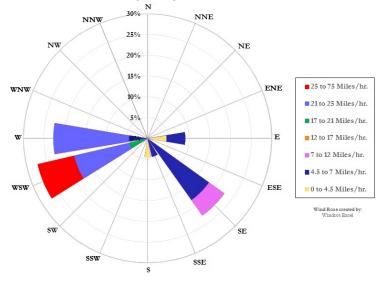


FIGURE B-5
EL CENTRO NAF (KNJK) WIND ROSE JUNE 26, 2014



**Figs B-4 & B-5:** El Centro NAF (KNJK) meteorological data indicates an increase in wind speed accompanied by gusts over 30 mph staring the afternoon on June 26, 2014. Wind data from the NCEI's QCLCD system

FIGURE B-6
NILAND JUNE 25, 2014 THROUGH JUNE 27, 2014
WIND SPEED & DIRECTION

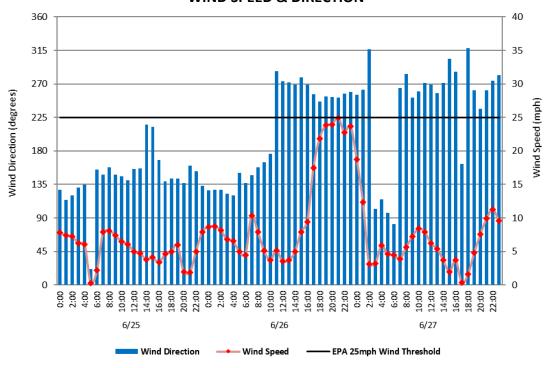
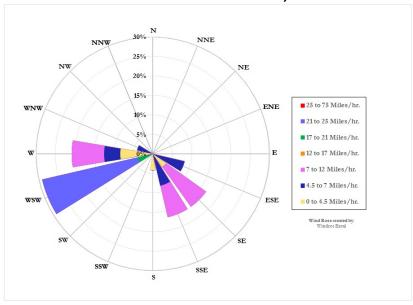


FIGURE B-7
NILAND WIND ROSE JUNE 26, 2014



**Figs B-6 & B-7:** The Niland monitoring site measured an increase in wind speeds, although not as elevated as at KIPL and KNJK, both of which were closer up stream to Brawley. Wind data from the EPA's AQS data bank

FIGURE B-8
EL CENTRO JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED & DIRECTION

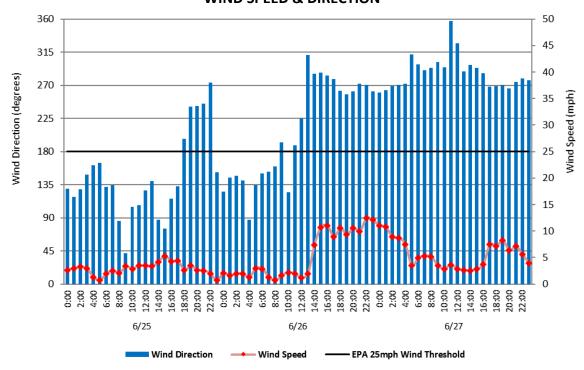
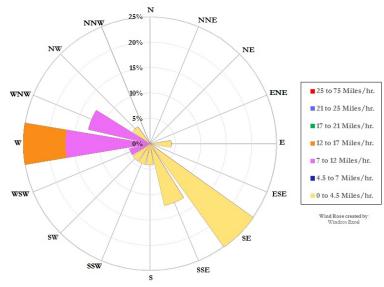
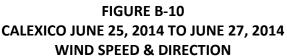


FIGURE B-9
EL CENTRO WIND ROSE JUNE 26, 2014



Figs B-8 & B-9: El Centro monitoring station data. Wind data from the EPA's AQS data bank



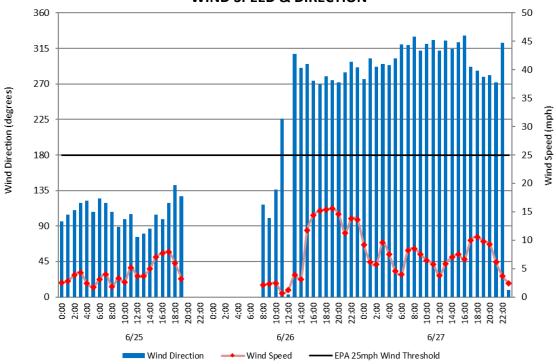
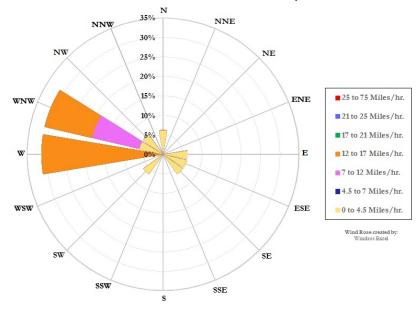


FIGURE B-11
CALEXICO WIND ROSE JUNE 26, 2014



Figs B-10 & B-11: Calexico monitoring station data. Wind data from the EPA's AQS data bank

## RIVERSIDE COUNTY SITES FIGURES B-12 THROUGH B-14

FIGURE B-12
PALM SPRINGS AIRPORT (KPSP) JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

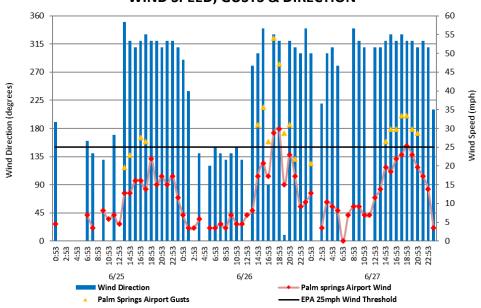


Fig B-12: Wind data is from the University of Utah's MesoWest

FIGURE B-13
JACQUELINE COCHRAN AIRPORT (KTRM) JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

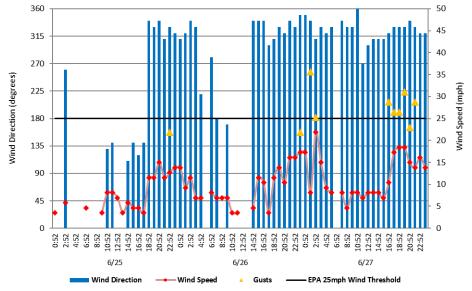
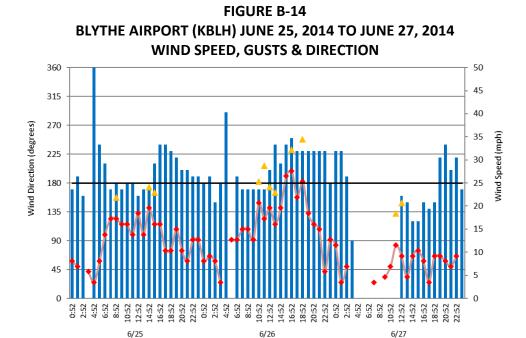


Fig B-13: Wind data is from the University of Utah's MesoWest



Figs B-14: Wind data from the University of Utah's MesoWest

-Wind Speed

Wind Direction

#### **SOUTHWESTERN ARIZONA SITE**

Wind Gusts

EPA 25mph Wind Threshold

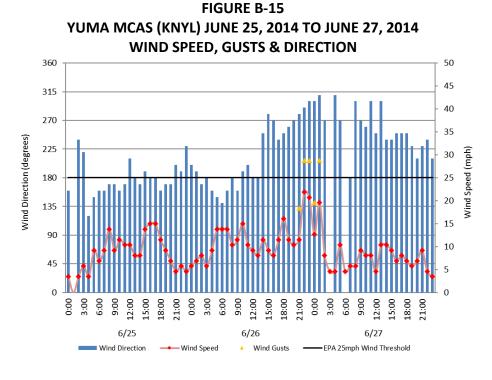


Fig B-15: Wind data from the University of Utah's MesoWest system

## SAN DIEGO COUNTY SITES FIGURES B-16 THROUGH B-24

FIGURE B-16
CAMPO AIRPORT (KCZZ) JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

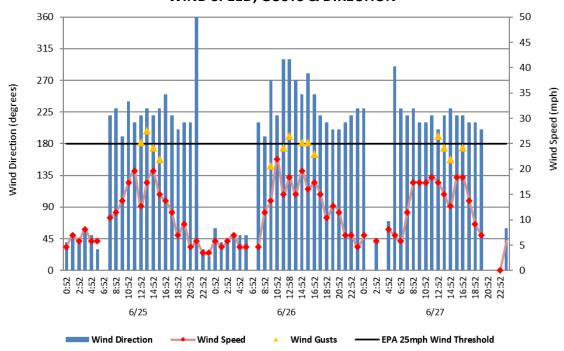
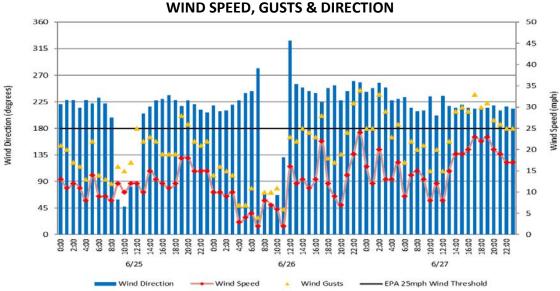
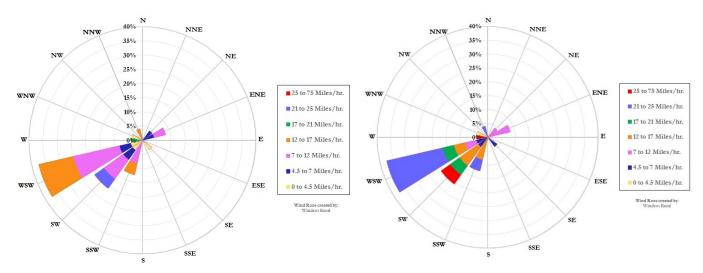


Fig B-16: Wind data from the University of Utah's MesoWest system

FIGURE B-17
SUNRISE-OCOTILLO: JUNE 25-JUNE 27
WIND SPEED GUSTS & DIRECTION

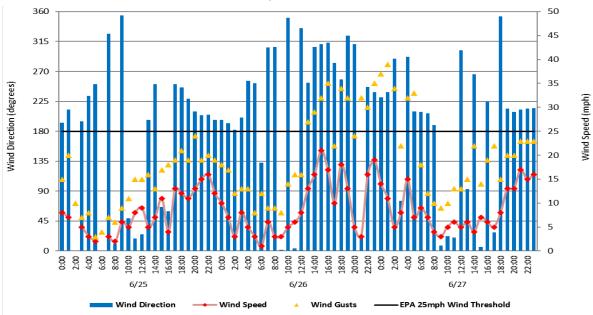


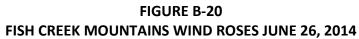
FIGURES B-18
SUNRISE-OCOTILLO WIND ROSES JUNE 26, 2014

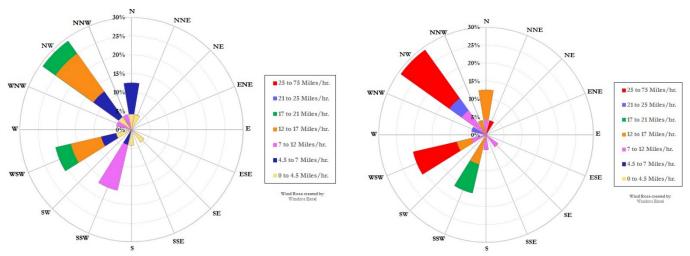


**Figs B-17 & B-18:** Left wind rose depicts winds, while right wind rose depicts gusts. Wind data from the University of Utah's MesoWest (Station ID IMPSD)

FIGURE B-19
FISH CREEK MOUNTAINS JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

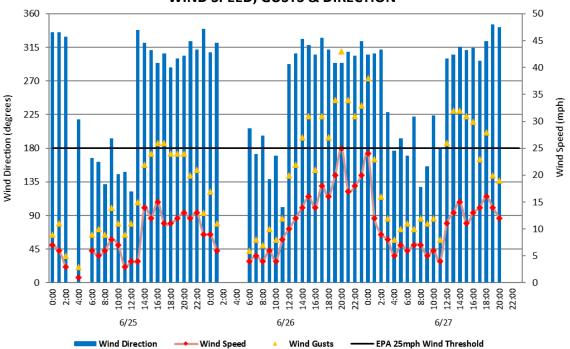




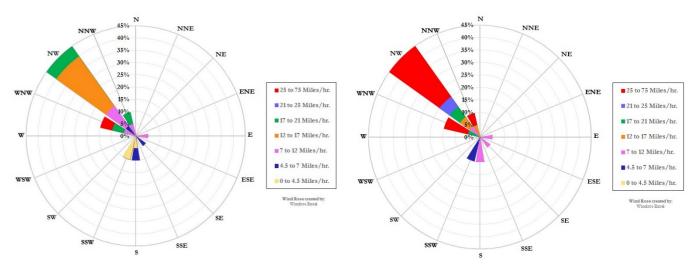


**Fig B-19 & B-20:** Left wind rose depicts winds, while right wind rose depicts gusts. Wind data from the University of Utah's MesoWest system. Station ID: FHCC1

FIGURE B-21
OCOTILLO WELLS JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION

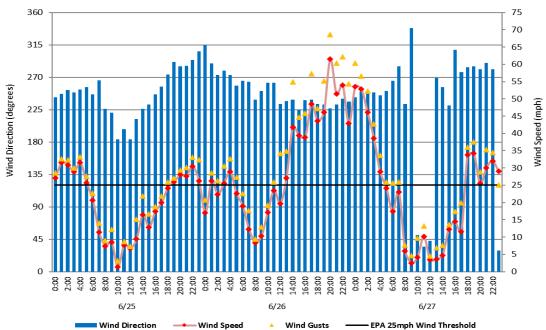


## FIGURE B-22 OCOTILLO WELLS WIND ROSES JUNE 26, 2014

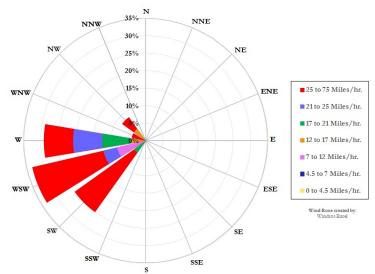


**Figs B-21 & B-22:** Left wind rose depicts winds, while right wind rose depicts gusts. Wind data from the University of Utah's MesoWest system. Station ID: KD6RSQ-5/AS398

FIGURE B-23
MOUNT LAGUNA (USAF SITE) JUNE 25, 2014 TO JUNE 27, 2014
WIND SPEED, GUSTS & DIRECTION



## FIGURE B-24 MOUNT LAGUNA WIND ROSE JUNE 26, 2014



**Figs B-23 & B-24:** A wind advisory issued on June 25, 2014 for the San Diego Mountains. The former USAF site on Mount Laguna measured elevated gusts as the system passed through. Wind data from the University of Utah's MesoWest. Station ID: HP001

### FIGURE B-25 IMPERIAL COUNTY AIRPORT QCLCD

QUALITY CONTROLLED Local Climatological Data: IMPERIAL COUNTY AIRPORT

U.S. Department of Commerce National Oceanic & Atmospheric Administration QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (final) HOURLY OBSERVATIONS TABLE IMPERIAL COUNTY AIRPORT (03144) IMPERIAL, CA (06/2014) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -58 ft. below sea level

Latitude: 32.834 Longitude: -115.578 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Туре		Dry Bulb Temp		Wet Bulb Temp		ew oint emp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Pressure	Press Tend		Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
25 25 25 25 25 25 25 25 25 25 25 25 25 2	0053 0153 0253 0353 0453 0553 0653 0753 0853 0953 11143 1153 1253 1353 1453	12 12 12 12 12 12 12 12 12 12 12 12 12 1	CLR	10.00 10.00		105 105	25.6 25.0 24.4 23.9 23.3 26.7 29.4 32.2 33.9 36.1 37.2 37.2 38.3 40.0 40.6 40.6 40.6 35.0 32.8 31.1 30.0	66 66 65 64 63 65 70 71 68 69 69 69 69 69 66 64 63 63 65	18.7 19.1 18.3 18.0 17.2 18.5 20.8 21.4 19.8 21.2 20.9 20.6 20.4 20.4 20.4 17.9 17.6 17.6	60 58 57 55 60 61 60 52 55 52 46 47 46 45 46 47 46	14.4 15.6 14.4 13.9 15.6 13.3 16.1 15.6 11.1 17.8 8.3 7.2 7.2 7.8 7.2 7.8 7.8 7.2 7.8 7.8 7.2 7.8	56 552 50 62 445 37 224 21 15 15 113 113 115 120	35509660838795	130 100 130 130 130 000 110 110 120 VR 000 130 130 130 130 130 140 260 220 240 220 220 220 220	21	29.75 29.75 29.76 29.76 29.76 29.81 29.81 29.81 29.81 29.81 29.81 29.70 20.70			29.69 29.69 29.70 29.70 29.72 29.74 29.75 29.75 29.75 29.75 29.75 29.70 29.70 29.65 29.65 29.65 29.65 29.65 29.65 29.69 29.69	AAA AAA AAA AAA AAA AAA AAA AAA AAA AAA AAA AAA AAA AAA AAA		29.69 29.69 29.70 29.70 29.71 29.75 29.75 29.75 29.75 29.73 29.73 29.73 29.68 29.64 29.64 29.63 29.64 29.65 29.69 29.69

Dynamically generated Thu Dec 17 14:16:05 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD

QUALITY CONTROLLED Local Climatological Data: IMPERIAL COUNTY AIRPORT

U.S. Department of Commerce National Oceanic & Atmospheric Administration

#### QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (final) HOURLY OBSERVATIONS TABLE IMPERIAL COUNTY AIRPORT (03144) IMPERIAL, CA (06/2014)

National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -58 ft. below sea level

Latitude: 32.834 Longitude: -115.578 Data Version: VER2

Date		Station Type	Sky Conditions	Visibility (SM)	) Type		Dry Bulb Temp		Wet Bulb Temp (F) (C)		ew oint emp	Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Station Pressure (in. hg)	Press Tend		Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5	6	(F)	(C) 8	9	10	11	(C)	13	14	15	16	17	18	19	20	21	22	23
26 26 26 26 26 26 26 26 26 26 26 26 26 2	0153 0253 0353 0453 0653 0653 0753 1053 1153 1253 1353 1453 1619 1628 1653 1753 1853 1953 2053 2253	12 12 12 12 12 12 12 12 12 12 12 12 12 1	CLR	10.00 10.00	нz	105 106 104 104 105 103 98 93 88 86 83 82	25.0 26.1 24.4 23.9 26.1 28.3 30.6 32.8 35.6 37.2 38.3 40.0 40.6 41.1 40.0 40.6 39.4 36.7 33.9 31.1 30.0 28.3 27.8	64 66 66 66 66 67 71 71 69 70 69 67 66 66 65 65 64 64 64 63	17.6 18.9 18.7 18.6 20.5 21.9 20.4 21.1 20.3 20.8 20.4 19.2 19.2 18.5 18.5 18.5 17.9 17.5	55 58 60 60 57 61 63 61 52 53 8 48 45 37 38 37 38 42 46 49 49 49	8.9 7.2 2.8 3.3 2.8 3.3 2.2 5.6 7.8 9.4 9.4 10.0	47 49 58 60 47 48 45 23 21 17 15 10 10 10 10 15 20 28 32 32	7 0 3 7 7 3 0 3 5 3 6 0 16	260 260	26 22 30 28 30	29.75 29.75 29.74 29.74 29.76 29.78 29.80 29.80 29.79 29.79 29.79 29.79 29.69 29.69 29.69 29.69 29.69 29.69 29.70 29.71 29.71 29.71 29.71 29.71			29.69 29.69 29.68 29.68 29.70 29.72 29.74 29.75 29.70 29.70 29.63 29.63 29.63 29.63 29.63 29.65 29.68 29.68 29.68	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		29.69 29.69 29.69 29.68 29.69 29.70 29.72 29.74 29.74 29.73 29.70 29.65 29.63 29.63 29.63 29.62 29.62 29.62 29.62 29.63 29.63 29.63 29.64 29.65 29.68

Dynamically generated Thu Dec 17 14:10:43 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD

### FIGURE B-26 EL CENTRO NAF QCLCD

QUALITY CONTROLLED Local Climatological Data: NAF

U.S. Department of Commerce National Oceanic & Atmospheric Administration

QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (06/2014) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -42 ft. below sea level

Latitude: 32.816 Longitude: -115.683 Data Version: VER2

Date	Time (LST)	Station Type	Sky Conditions	Visibility (SM)	Weather Type		ry ulb mp	p Bulb Temp		Dew Point Temp		Rel Humd %	Wind Speed (MPH)	Wind Dir	Wind Gusts (MPH)	Pressure	Press Tend			Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
25 25 25 25 25 25 25 25 25 25 25 25 25 2	0056 0156 0256 0356 0456 0556 0656 0756 0856 1056 1156 1156 1356 1456 1556 1656 1756 1856 1956 2056	<b>.</b> 	CLR CLR	10.00 10.00 10.00 10.00 7.00 7.00 8.00 6.00 6.00 6.00 6.00 6.00 6.00 6	HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ H	105 106	26.1 21.7 22.8 22.2 21.7 22.8 26.1 28.3 33.3 34.4 40.0 40.6 41.1 37.8 39.4 35.6 33.9 32.8 32.8 33.3 32.9 40.0	63 64 66 65 63 65 68 69 69 68 69 69 68 69 69 66 64 64 63 62	17.0 17.6 18.6 18.4 17.3 18.3 19.8 20.5 20.7 19.8 20.8 20.3 20.4 20.2 20.2	59 61 58 60 61 51 55 47 47 46 44 43 47 44 44 44 45	10.6 15.0 16.1 16.1 14.4 15.6 16.1 13.3 10.6 8.3 7.8 6.7 6.1 6.7 6.1 6.7 7.2	38 66 66 68 64 64 48 30 18 19 11 11 11 11 11 11 11 11 11 11 11 11	7 7 7 7 7 8 7 0 0 5 6 6 6 5 9 6 9 3 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	180 120 120 150 310 000 000 110 050 100 VR 130 120 VR 130 120 140 240 240 240 240 240 240 240		29.73 29.73 29.74 29.74 29.76 29.80 29.80 29.80 29.80 29.80 29.87 29.79 29.79 29.74 29.72 29.69 29.66 29.67 29.70 29.70 29.70 29.70 29.70			29.73 29.73 29.73 29.75 29.77 29.78 29.80 29.80 29.80 29.77 29.74 29.72 29.70 29.68 29.70 29.68 29.70 29.68 29.70 20.70	AA AA AA AA AA AA AA AA AA AA AA AA AA		29.69 29.69 29.70 29.70 29.72 29.74 29.76 29.76 29.75 29.75 29.75 29.73 29.79 29.65 29.65 29.65 29.65 29.65 29.69 29.69

Dynamically generated Thu Dec 17 14:26:54 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD

QUALITY CONTROLLED Local Climatological Data: NAF

U.S. Department of Commerce National Oceanic & Atmospheric Administration QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA (may be updated) HOURLY OBSERVATIONS TABLE NAF (23199) EL CENTRO, CA (06/2014) National Climatic Data Center Federal Building 151 Patton Avenue Asheville, North Carolina 28801

Elevation: -42 ft. below sea level

Latitude: 32.816 Longitude: -115.683 Data Version: VER2

Date	Time (LST	Station Type	Sky Conditions	Visibility (SM)	Weather Type	Dry Bulb Temp (F) (C)		Wet Bulb Temp (F) (C)		Dew Point Temp (F) (C)			Wind Speed (MPH)	Wind Dir		Station Pressure (in. hg)	Press Tend		Sea Level Pressure (in. hg)	Report Type	Precip. Total (in)	Alti- meter (in. hg)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
26 26 26 26 26 26 26 26 26 26 26 26 26 2	0056 0156 0256 0356 0456 0656 0756 0856 1156 1156 1356 1456 1756 1856 2056 2256 2256	555555555555555555555555555555555555555	FEW080 FEW220 FEW200 FEW250 FEW080 FEW200 SCT250 FEW080 FEW200 SCT250 FEW080 SCT200 BKN250 FEW080 BKN200 BKN250 SCT080 BKN250	10.00 10.00 10.00 6.00 10.00 6.00 6.00 6	HZ BLDU	107 109 108 109	25.0 23.9 21.7 21.7 23.9 27.8 33.3 35.0 37.2 38.9 40.6 41.7 42.8 40.0 37.2 35.0 30.6 30.0	62 59 62 64 69 71 68 68 70 69 68 66 66 66 66 65 64 64 64 63	16.7 14.8 16.4 17.5 20.3 21.7 21.5 20.2 22.0 22.1 120.4 20.2 21.1 18.6 18.6 18.4 18.6 18.4 17.6	52 53 49 55 56 61 64 59 52 49 51 45 42 30 30 28 37 40 45 48 48 48	11.1 11.7 9.4 12.8 13.3 15.0 11.1 17.8 15.0 11.1 10.6 7.2 5.6 -1.1 -1.0 -2.2 8.9 8.9 8.9	42 46 57 52 49 33 23 18 11 6 7 6 10 13 18 24 26 27 29	3 0 6 5 5 3 5 6 8 8 3 6 22 22 25 223 18 5 29 26	280 280 270 250 240 240 250 240	33 34	29.73 29.73 29.72 29.72 29.74 29.76 29.78 29.78 29.79 29.77 29.74 29.74 29.74 29.68 29.68 29.68 29.68 29.68 29.68 29.79 29.71 29.71 29.71 29.71 29.71 29.71			29.73 29.73 29.74 29.74 29.75 29.77 29.79 29.79 29.79 29.79 29.71 29.68 M 29.68 M 29.68 29.70 29.72 29.73 29.74 29.74 29.74 29.75	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		29.69 29.69 29.69 29.70 29.72 29.74 29.73 29.74 29.73 29.72 29.70 29.64 29.64 29.64 29.64 29.65 29.67 29.67 29.69

Dynamically generated Thu Dec 17 14:32:18 EST 2015 via http://www.ncdc.noaa.gov/qclcd/QCLCD